

(FILE 'USPAT' ENTERED AT 11:45:24 ON 28 JUN 1999)  
L1 47010 S (ETCH? OR REMOVE? OR CLEAN?) AND WAFER?  
L2 10705 S (ETCH? OR REMOVE? OR CLEAN?) AND (ORGANIC(P)CONTAMINANT?  
OR  
L3 1988 S L1 AND L2  
L4 8 S L3 AND (252/79.3/CCLS)  
L5 173 S L3 AND (WATER AND OZONE AND CARBOXYLIC(1W)ACID OR CITRIC  
(1W  
L6 4 S L5 AND (252/79.3/CCLS)  
L7 42 S L3 AND (134/2/CCLS)

5, 855, 8 11

=> s 14 and (438/745/ccls)

L5

146 438/745/CCLS  
1 L4 AND (438/745/CCLS)

=> d ab kwic cit

US PAT NO:

4,353,779 [IMAGE AVAILABLE]

L5: 1 of 1

ABSTRACT:

An **etching** solution for III/V semiconductor material, such as gallium arsenide, consists essentially of: 20 to 90 vol. % of **phosphoric acid** solution; 15 to 80 vol. % of hydrogen peroxide solution; 0 to 60 vol. % of water; and an amount of fluorine ion effective to provide at least 0.01 mole of fluorine ion per liter of solution, said solution being effective to **etch** without evolving a gaseous product.

TITLE: Wet chemical **etching** of III/V semiconductor material without gas evolution

\* 5,640,703 -  $H_2O + \text{Carbonic Acid} + \text{Conditioning agent}$   
\* 5,837,662 =>  $\text{Citric Acid} + HF + \text{ALK.} + \text{surfactants}$

5,776,351 ->  $H_2O + O_3$

(5,776,351)  
(5,513,518) }  $\text{H}_2\text{O} + \text{Conditioning agent}$   
(5,705,089) = phosphoric acid.

(FILE 'USPAT' ENTERED AT 09:14:36 ON 28 JUN 1999)  
L1 5787 S (REMOVE? OR CLEAN?) AND (ORGANIC(1W)CONTAMINANTS OR PHOT  
O-R  
L2 159 S L1 AND (WATER AND OZONE AND ACETIC(1W)ACID OR CITRIC(1W)  
ACI  
L3 5 S L2 AND (252/79.3/CCLS)  
L4 0 S L2 AND (438/745/CCLS AND 134/CLAS )  
L5 20 S L2 AND (438/745/CCLS OR 134/CLAS )  
L6 367 S L1 AND (WATER AND OZONE OR 03 AND CARBOXYLIC(1W)ACID OR  
PHO  
L7 93 S L6 AND (CITRIC(1W)ACID OR ACETIC(1W)ACID AND HCL OR HYDR  
OCH

=> s 16 and (liquid(1w)mist or acid(1w)mist)

619139 LIQUID  
16359 MIST  
509 LIQUID(1W)MIST  
460199 ACID  
16359 MIST  
359 ACID(1W)MIST  
L8 2 L6 AND (LIQUID(1W)MIST OR ACID(1W)MIST)

=> s (etch? or remove? or clean?) and (organic(p)contaminant? or  
photo(1w)resist)

102958 ETCH?  
1115441 REMOVE?  
313664 CLEAN?  
371922 ORGANIC  
66715 CONTAMINANT?  
6862 ORGANIC(P)CONTAMINANT?  
74524 PHOTO  
107551 RESIST  
4515 PHOTO(1W)RESIST  
L1 10705 (ETCH? OR REMOVE? OR CLEAN?) AND (ORGANIC(P)CONTAMINANT? OR  
PH OTO(1W)RESIST)

=> s 11 and (water and ozone and hcl or hf or co2 or hno3)

751508 WATER  
18647 OZONE  
95171 HCL  
28745 HF  
1993 CO2  
145 HNO3  
L2 895 L1 AND (WATER AND OZONE AND HCL OR HF OR CO2 OR HNO3)

=> s 12 and (134/clas or 438/clas)

24273 134/CLAS  
29496 438/CLAS  
L3 327 L2 AND (134/CLAS OR 438/CLAS)

=> s 12 and (carboxylic(1w)acid or phosphoric(1w)acid or acetic(1w)acid)

126471 CARBOXYLIC  
460199 ACID  
94248 CARBOXYLIC(1W)ACID  
82568 PHOSPHORIC  
460199 ACID  
67046 PHOSPHORIC(1W)ACID  
135323 ACETIC  
460199 ACID  
119969 ACETIC(1W)ACID  
L4 269 L2 AND (CARBOXYLIC(1W)ACID OR PHOSPHORIC(1W)ACID OR ACETIC(  
1W)